ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)/HUMAN IMMUNODEFICIENCY VIRUS

Cause/Epidemiology

Acquired Immunodeficiency Syndrome (AIDS) is a bloodstream infection caused by the Human Immunodeficiency Virus (HIV). HIV is a retrovirus, of which two types have been identified: type 1 (HIV-1) and type 2 (HIV-2). In Manitoba HIV-1 is the predominant infection.

AIDS was first reported in 1981, but isolated cases had occurred in the United States and several other countries in the world during the 1970s. AIDS has been reported in every country in the world, including all races, ages and social classifications. AIDS cases were diagnosed in Canada from the beginning of 1979.

Distribution of cases by exposure category has changed over the years. There has been a decrease in cases attributed to men having sex with men. The proportion of cases of men having sex with men peaked during 1987-1988 and has been decreasing since then. The cases attributed to heterosexual contact have been increasing over the years and have become most prevalent in Africa, the Americas, Western Europe and Asia. Sub-Saharan Africa is the most heavily affected region in the world.

Clinical Presentation

The severity of HIV-related infections is related to the degree of immune system dysfunction. The prognosis for persons with HIV infection has improved with early treatment of a combination of antiviral therapy and prophylaxis against opportunistic infections. Effective treatment can alter the natural history of HIV infection and reduce the risk of end-stage disease (AIDS).

AIDS is advanced HIV-related disease. This syndrome is the end-stage of HIV infection that has damaged the immune system, leading to many opportunistic infections and cancers. AIDS is a severe, life-threatening clinical condition first recognized in 1981.

10 - 20% of perinatally infected children who do not receive treatment will present with moderate to severe disease in the first year of life. The time to disease progression of other perinatally infected children is unknown but is likely similar to adults. Treatment can delay progression of the disease.
The AIDS case definition includes the following opportunistic infections, indicator diseases and cancers among those who are infected with HIV.

Opportunistic infections and indicator of diseases

- *Pneumocystis carinii* pneumonia
- Chronic cryptosporidiosis
- Toxoplasmosis of the central nervous system
- Esophageal or lower respiratory tract candidiasis
- Disseminated or CNS cryptococcosis
- Pulmonary, gastrointestinal, CNS or ocular CMV infection
- Chronic ulcerative mucocutaneous or disseminated *Herpes simplex* infection
- Progressive multifocal leukoencephalopathy
- Wasting syndrome
- Pulmonary and extra-pulmonary tuberculosis
- Recurrent pneumonia (two or more episodes in 1 year)
- Neurologic disease such as HIV dementia or sensory neuropathy

Cancers among those who are infected with HIV

- Kaposi’s sarcoma
- Primary B-cell lymphoma limited to the brain
- Non-Hodgkins lymphoma
- Invasive cervical cancer

**Incubation**

People within several weeks to months (generally three months) after infection with the Human Immunodeficiency Virus (HIV) develop an acute mononucleosis-like illness. This illness can last one to two months. Infected individuals may be free of any other signs or symptoms of illness for months to years.

**Transmission**

Modes of transmission include

- Unprotected intercourse
- Injection drug use
- Other unsafe injections
- Blood transfusions
- Direct blood contact
- Mother to child
The three most common risk categories for HIV infection in Manitoba are

- Men who have unprotected sex with men
- Injection drug users
- Heterosexual activity with a person at risk of HIV (IV drug users and bisexual men)

Transmissibility begins early after the onset of HIV infection and extends throughout life.

Persons who have recently acquired the infection and are symptomatic have high viral loads and are at high risk for transmission. The infectivity increases with increasing immune deficiency.

In healthcare settings transmission has occurred by

- Direct, deep parenteral inoculation via a hollow-bore needle of blood from a source with high-titre HIV-1 viremia, such as in recent seroconversion or advanced HIV disease
- Parental inoculation of blood or bloody body fluids containing high-titre virus in a laboratory setting
- Through blood transfusions and/or blood products contaminated with HIV
- Contaminated cutaneous scratches, abrasions, burns or other lesions with blood and/or bloody body fluids from a person infected with HIV
- Contamination of mucosal surfaces with blood and/or bloody body fluids

**Infection Prevention and Control Practices**

Follow Routine Practices for a resident with AIDS or HIV.

**Occupational Health**

**Definition of Occupational Exposure**

A healthcare worker who has had a percutaneous injury from

- Equipment contaminated with blood and/or body fluids
- Mucous membranes contaminated with blood and/or body fluids, and/or
- Non-intact skin contact with blood and/or body fluids

**A Healthcare Worker Exposure to HIV**

- Follow the Winnipeg Regional Health Authority (WRHA) ‘Post Exposure Prophylaxis Care Map/WRHA Blood and Body Fluid Post Exposure Management’ policy # 20. 10. 100
- Follow the Protocol For Exposure to Blood and Body Fluids in Personal Care Homes Algorithm
The exposed healthcare worker shall contact Occupational Health/designate for clinical management. This may include administration of prophylactic anti-retroviral drugs (ideally within 1-2 hours of exposure).

No modifications to work practices or work restrictions are required.

A Healthcare Worker Symptomatic or Infected with HIV
- Follow the WRHA ‘Human Immunodeficiency Virus Infection in Healthcare Workers’ policy, number 20. 10. 050
- Physician confirmed diagnosis
- Healthcare workers shall be referred to Occupational Health/designate for clinical management
- Work modifications or restrictions may be required for healthcare workers who perform exposure-prone procedures, or who have extensive dermatitis